

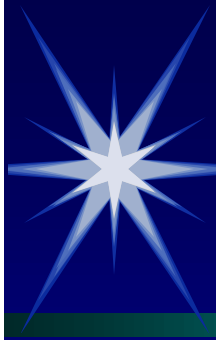


Using incentives to enhance attendance and abstinence in community treatment settings

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Supported by NIH grants R29-DA12056, R01-DA13444,
P50-DA09241 and P50-AA03510



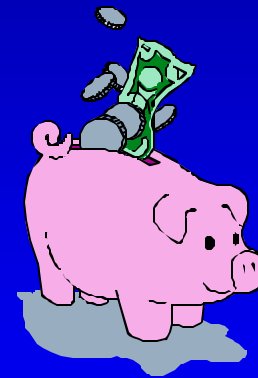
Outline

- Rewards and punishers in everyday life
- Background of contingency management
 - studies in research clinics
- Adaptation to “real world” clinics
 - studies in community-based clinics
- Implementation issues
 - types of behaviors, reinforcers to use, behavioral principles

Rewards used in everyday settings

- Salaries, commission, awards, social praise

- Children



- Pets





Positive incentives used in substance abuse treatment

AA

- coffee, food
- group recognition and approval
- 30-day pins/certificates
- act as sponsor for others

Out-patient treatment

- certificates, praise

Methadone maintenance

- take-home doses
- early dosing windows



Contingency management:



- 1.) Frequently monitor target behavior.
- 2.) Provide tangible reinforcement when target behavior occurs.
- 3.) Remove reinforcement when target behavior does not occur.

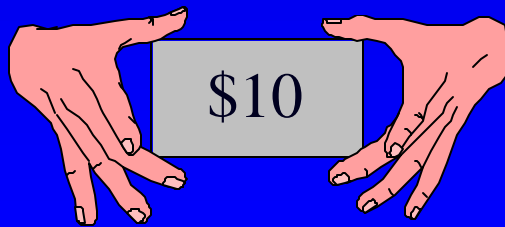


Treatment of Cocaine Dependence

Higgins et al., 1994

Contingency Management

- Community Reinforcement Approach Therapy
- Urine testing 2x/week
- Vouchers



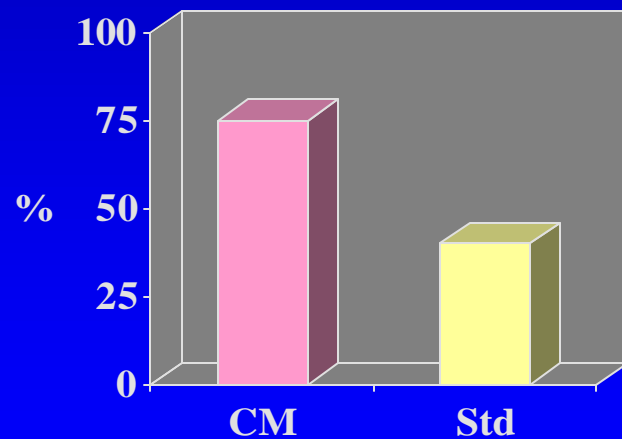
Up to \$1000 available

Control Treatment

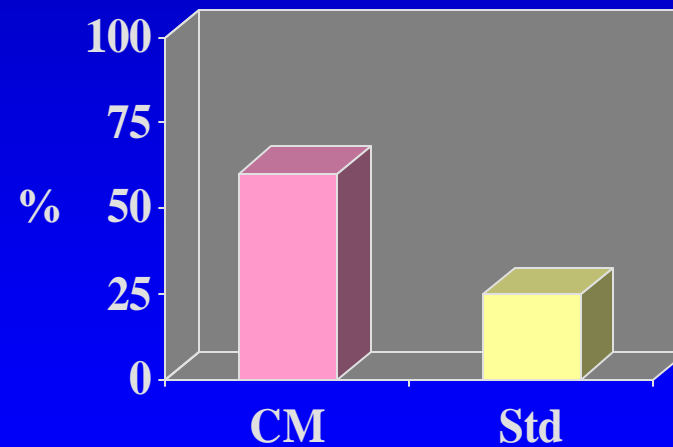
- Community Reinforcement Approach Therapy
- Urine testing 2x/week
- No vouchers

Treatment of Cocaine Dependence

Retained throughout
Trial



>8 Weeks of Cocaine
Abstinence

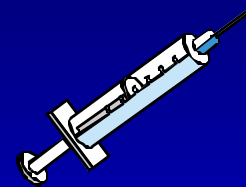


Higgins et al., 1994

Contingency management reduces drug use

- **Opioids**

(Bickel et al., 1997; Preston et al., 1998)



- **Cocaine**

(Higgins et al., 1991, 1993, 1994; Silverman et al., 1996)

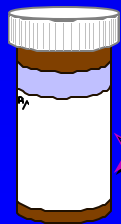
- **Benzodiazepines**

(Stitzer et al., 1992)



- **Marijuana**

(Budney et al., 1991, Budney et al., 2000)



- **Nicotine**

(Stitzer & Bigelow, 1984; Roll et al., 1996)

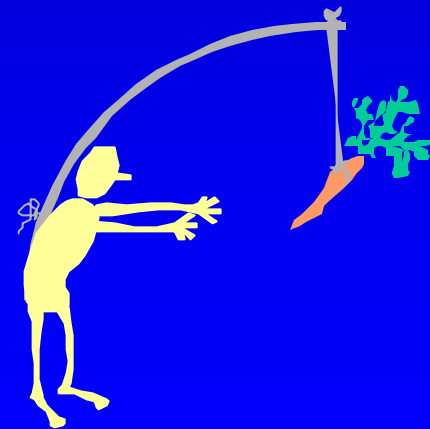


Addressing some of the practical concerns

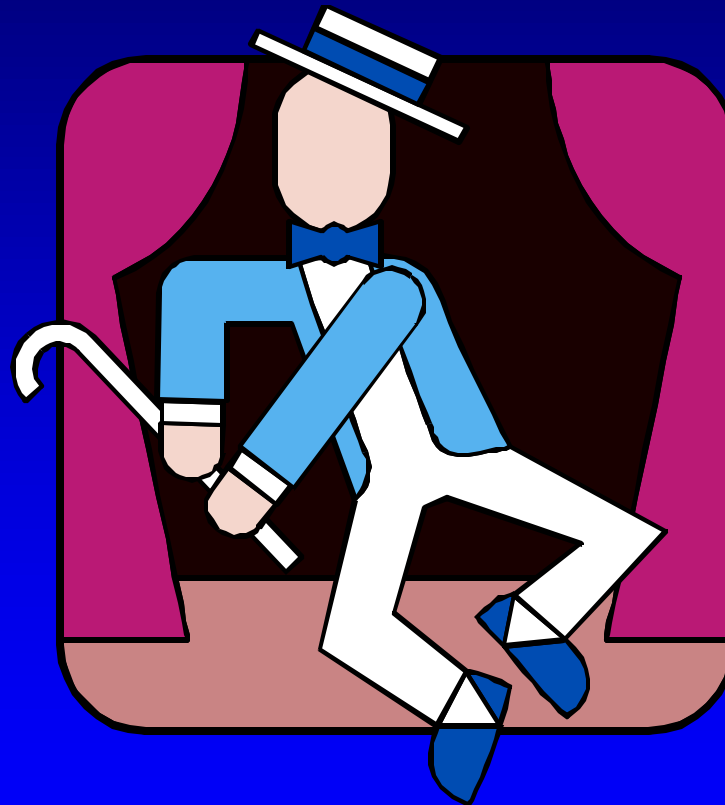
1. Cost



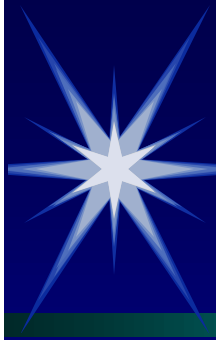
2. Generalization and Acceptability



Intermittent schedule of reinforcement



Implementation into standard clinic settings



Standard VA clinic setting

Subjects: 42 alcohol-dependent outpatients

Standard treatment:

➤ Intensive outpatient day program

5 hrs/day, 5 days/week, weeks 1-4

➤ Aftercare

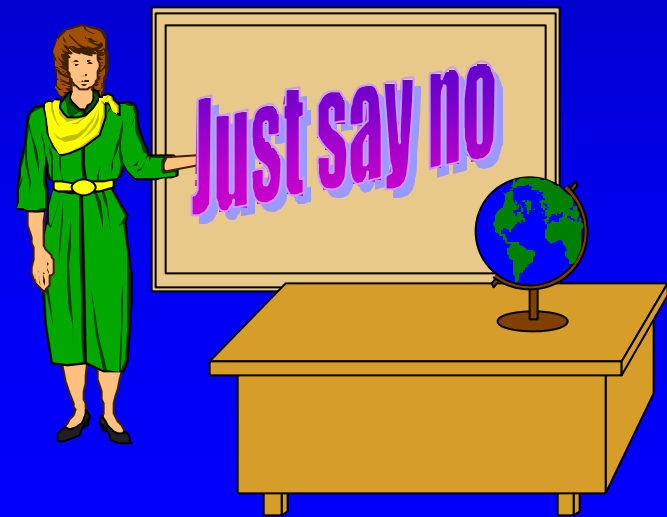
1-3 groups/week, weeks 4-8

Treatment consisted of group sessions: 12 step, relapse prevention, voc rehab, AIDS, coping skills

Standard treatment group

Received standard group treatment and
BAC monitoring (daily during intensive, weekly
during aftercare).

Additional 15 min of
education on
alcohol abuse weekly





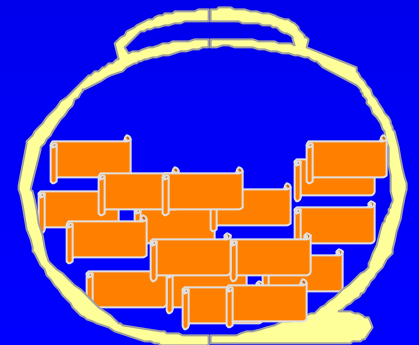
Contingent group

Standard group treatment and BAC monitoring

Reinforce alcohol abstinence:

- One draw for each negative BAC.
- Five bonus draws for a week of consecutive abstinence.

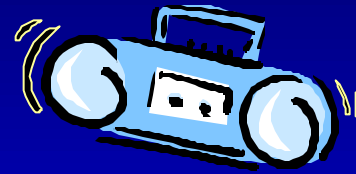
128 draws possible (64 BAC, 64 activities)



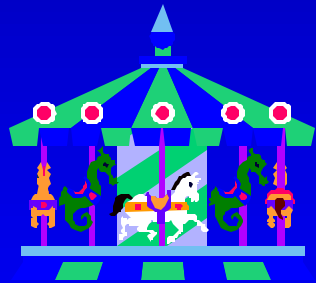
Half the cards are winning



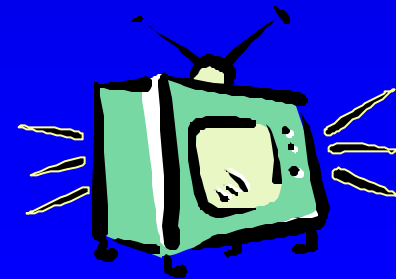
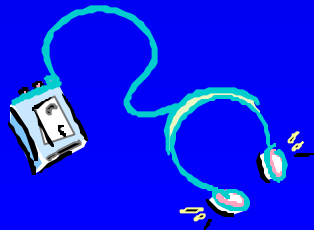
➤ 1/2 chance of winning a small \$1 prize

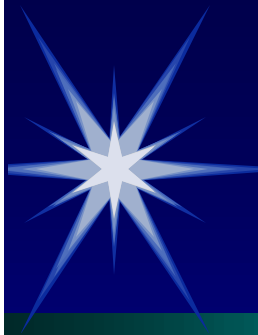


➤ 1/16 chance of winning a medium \$20 prize

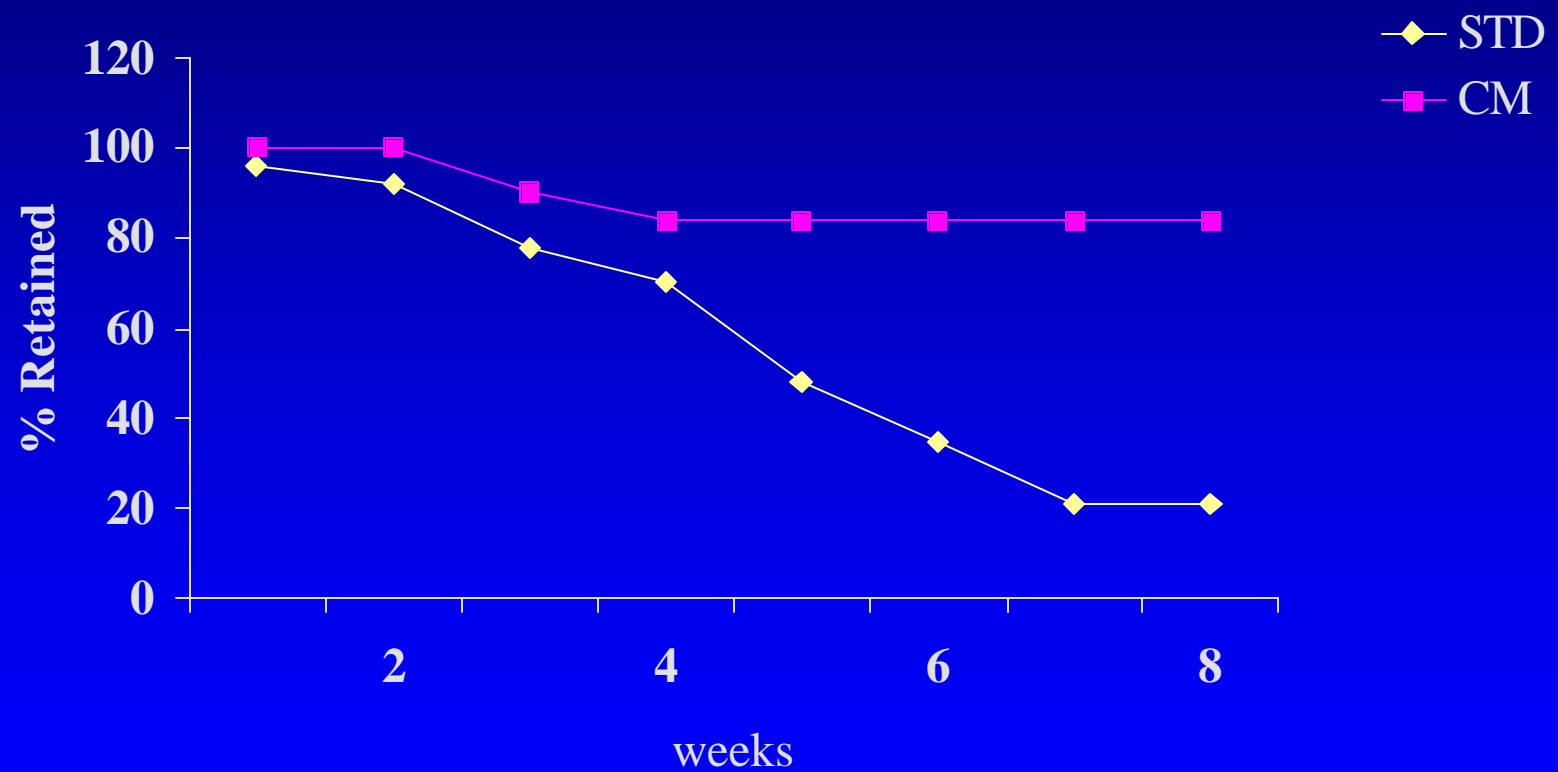


➤ 1/250 chance of winning a jumbo \$100 prize



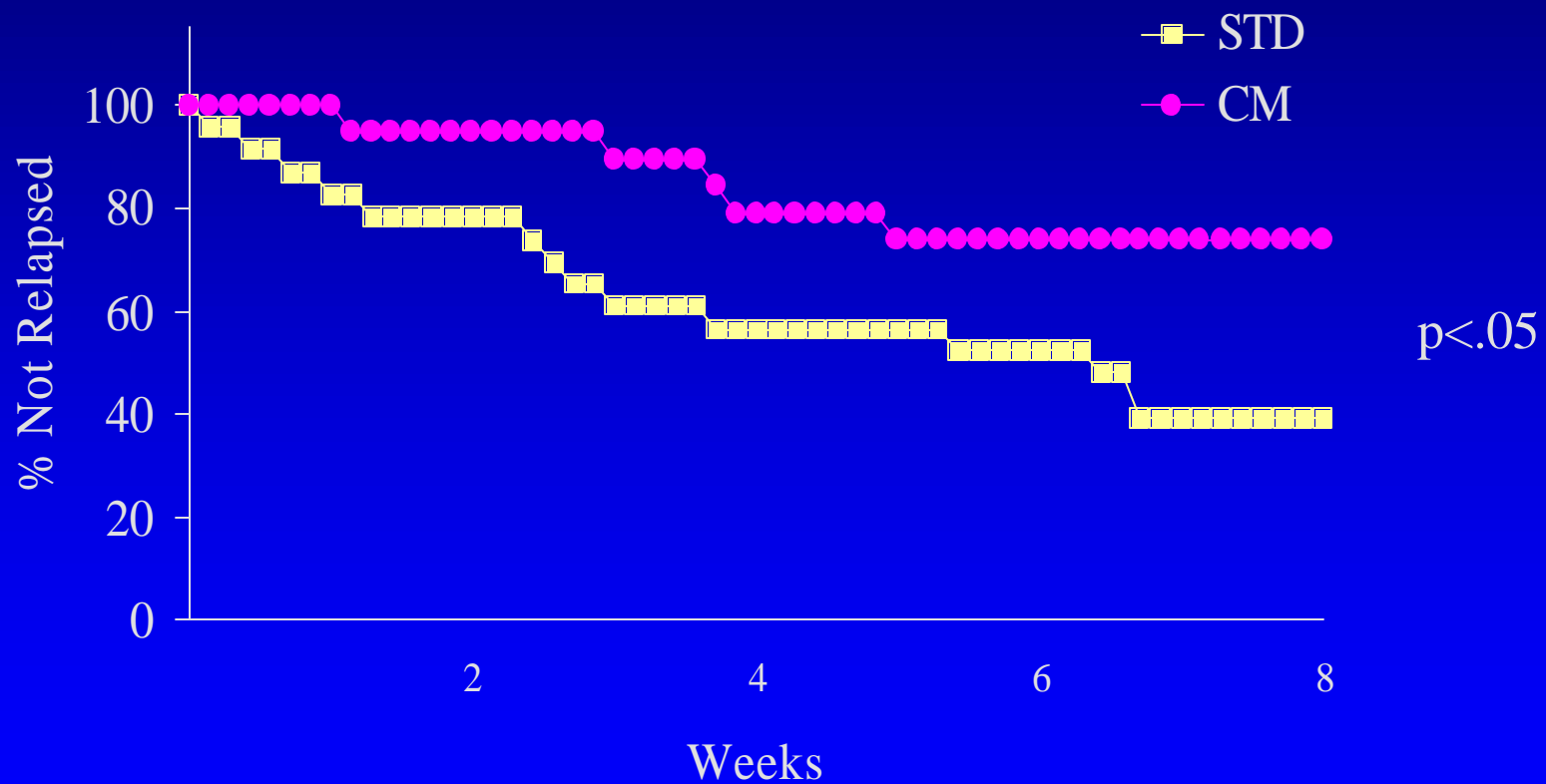


Retention



Petry et al., 2000

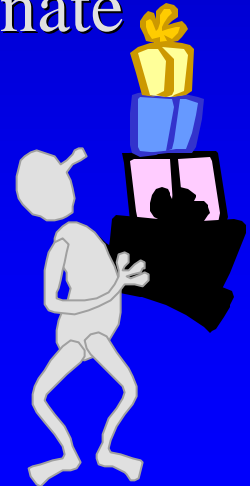
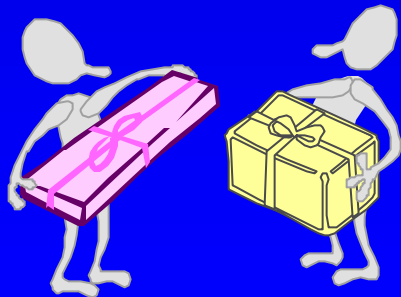
Time until first heavy drinking episode



Petry et al., 2000

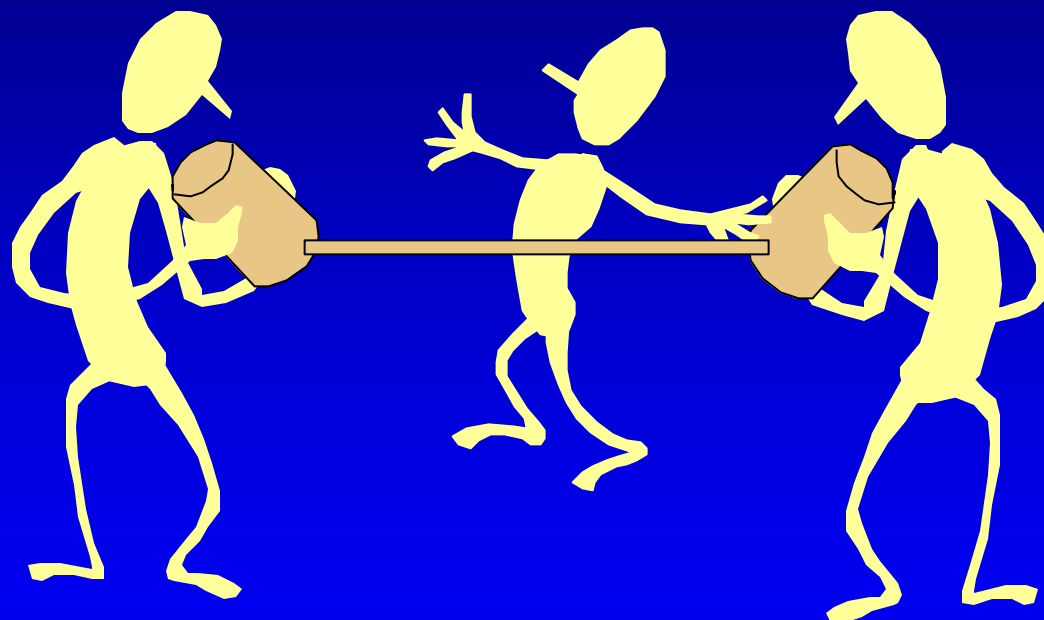
Summary

- This variable ratio schedule of reinforcement significantly increased retention and reduced alcohol use.
- On average, subjects earned \$200 worth of prizes.
- Local retailers and stores were willing to donate prizes.





How low can we go?



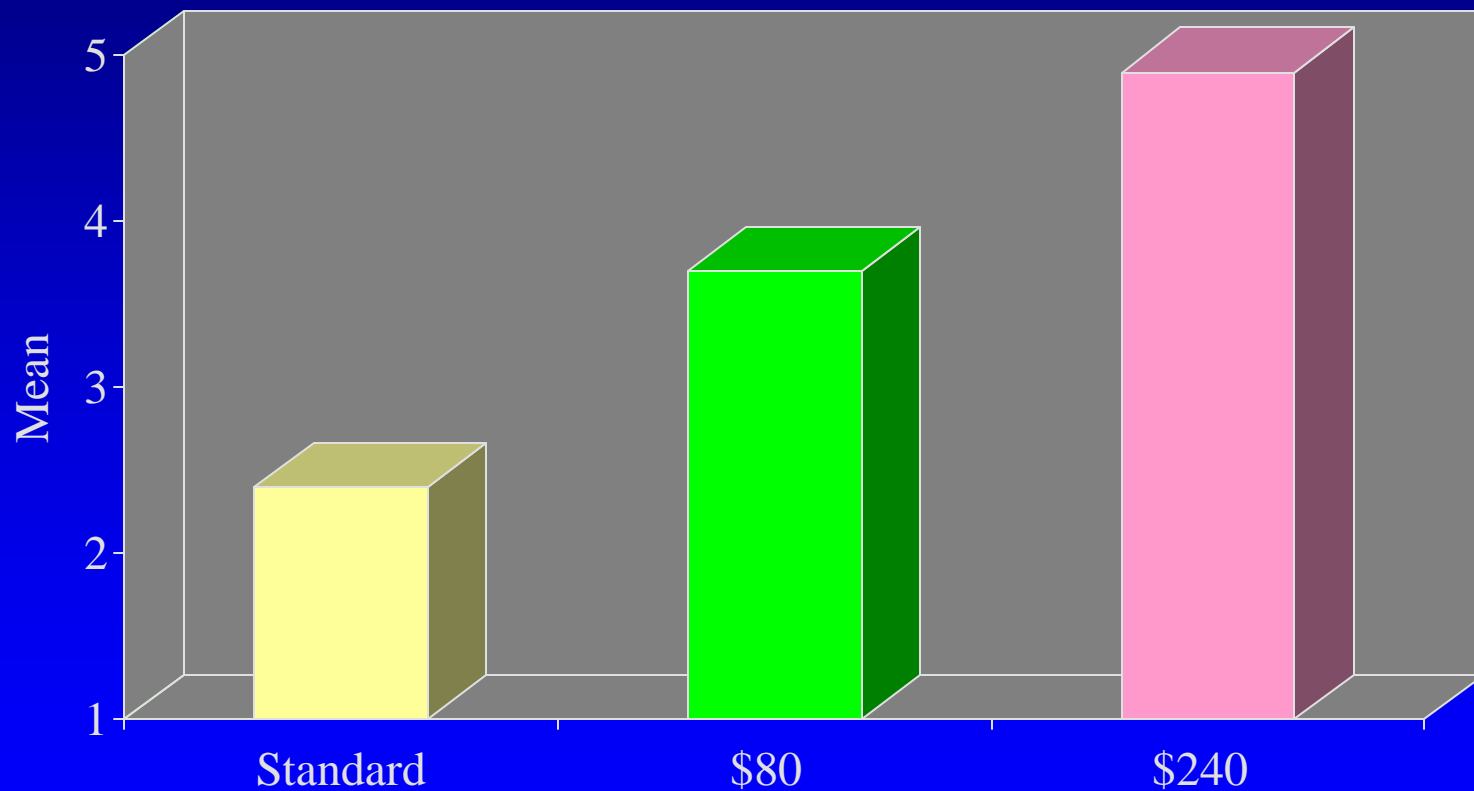
Treatment groups

Cocaine-dependent patients entering intensive day program randomly assigned to:

- 1.) Standard treatment
- 2.) Standard treatment plus \$80 CM
(\$0.33, \$5, and \$100 prizes)
- 3.) Standard treatment plus \$240 CM
(\$1, \$20, and \$100 prizes)

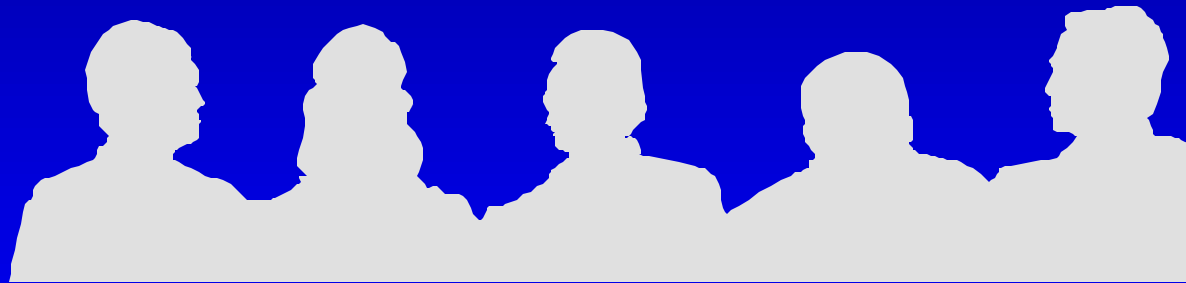


Mean weeks of continuous cocaine abstinence

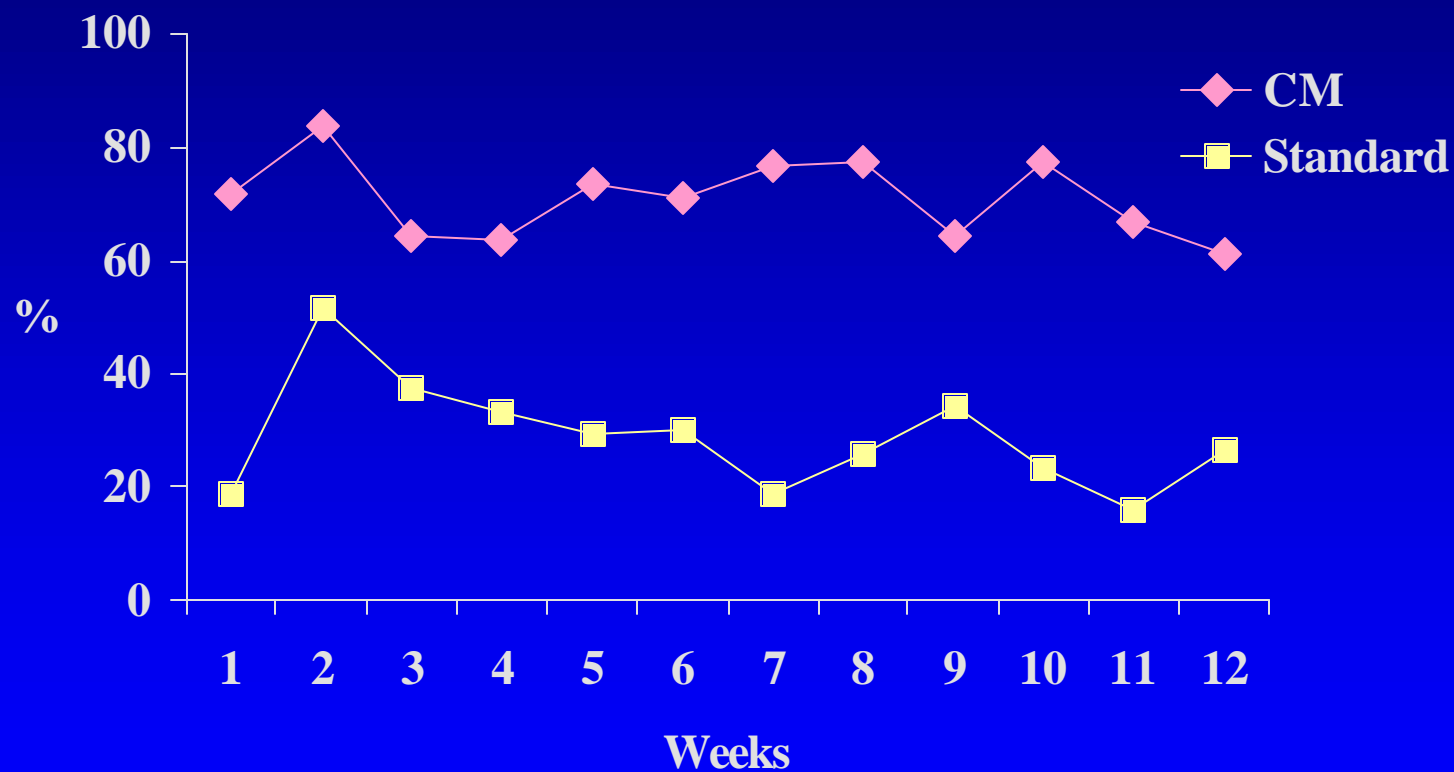




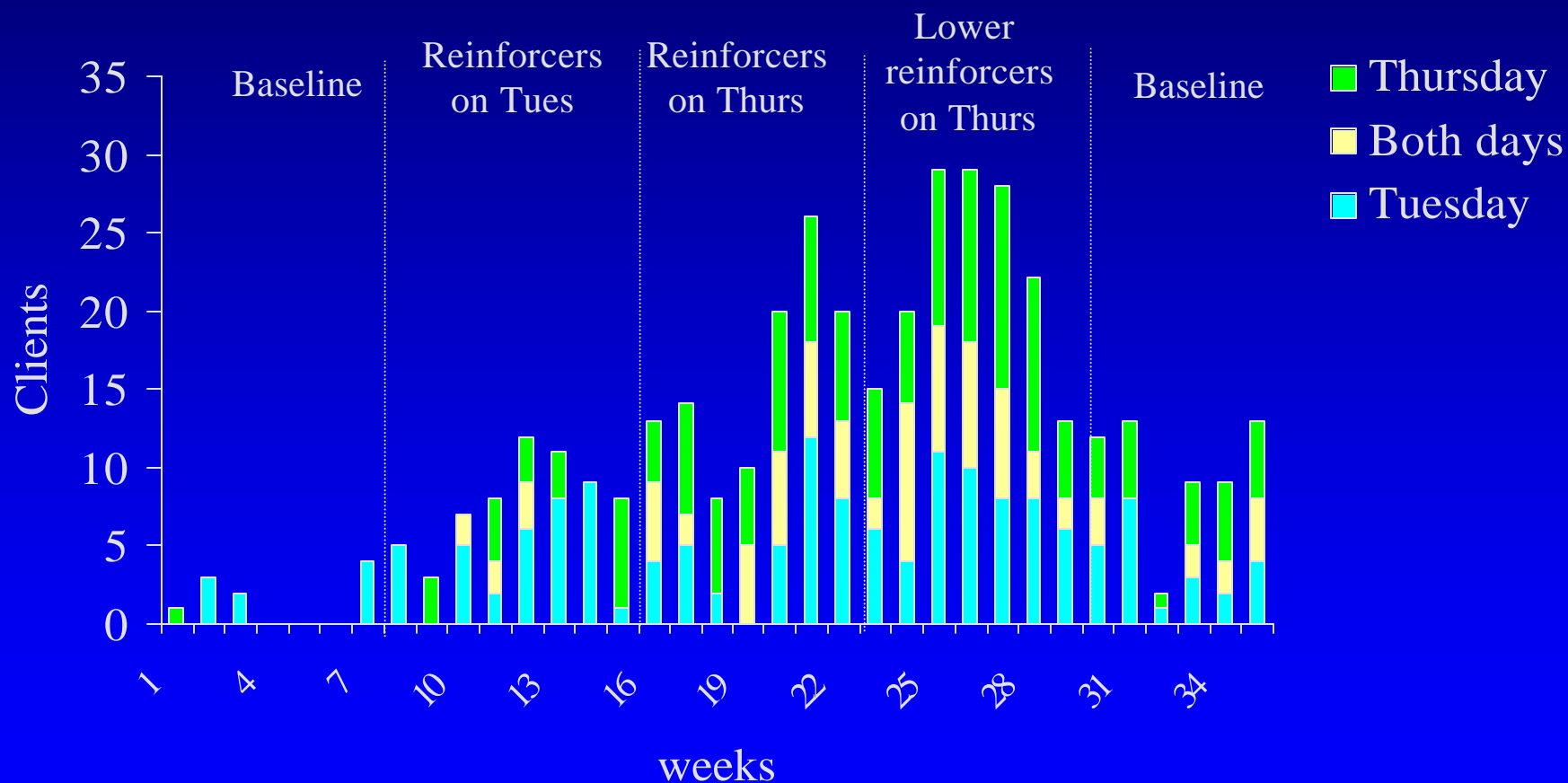
Can it work in group settings?



Group attendance at a methadone clinic



Attendance at groups at HIV center





Section summary

- This lower-cost CM system seems effective in retaining patients in treatment.
- It seems effective in reducing substance use.
- Larger magnitude prizes seem more effective than smaller magnitude prizes, but prizes may work as well as vouchers.
- This CM system can be implemented into group treatment format.



C. Implementation issues

- 1.) Behaviors to reinforce
- 2.) Reinforcers to use
- 3.) Behavioral principles to apply



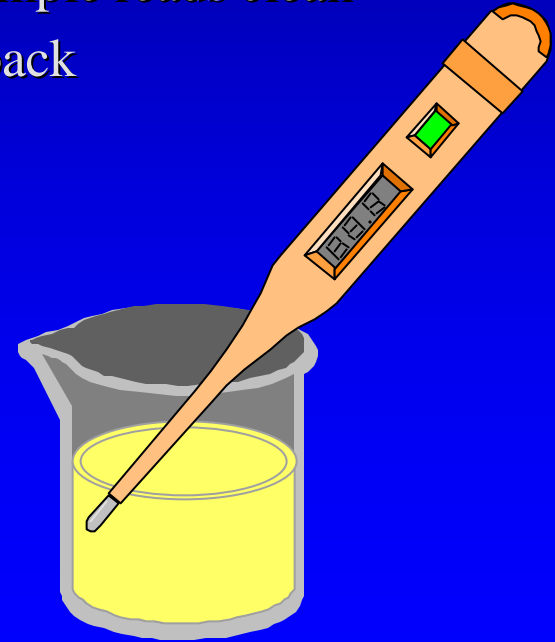
1. Behaviors to reinforce

- Attendance
- Drug abstinence

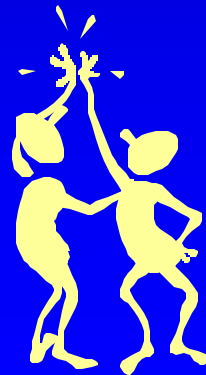
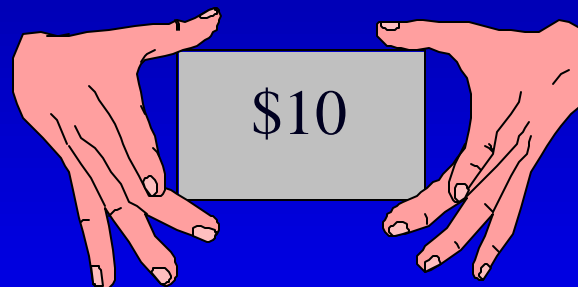


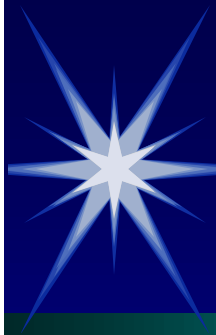
Technical issues

- Screen samples frequently so that all use of the target drug is detected.
 - opioids, cocaine: test 3x/week
 - marijuana: in chronic users, 2-3 weeks before sample reads clean
 - alcohol: breath samples measure only 12 hours back
 - nicotine: 3x/day
- Ensure validity of sample.
- Use onsite testing system to provide immediate feedback.



B.) Reinforcers to use





Vouchers



Increasing magnitude, bonus, up to \$1000

\$2.50	\$10.00
\$3.75	\$11.25
\$5.00 + \$10	\$12.50 + \$10
\$6.25	\$13.75
\$7.50	\$15.00
\$8.75 + \$10	\$16.25 + \$10

Advantages: demonstrated efficacy, accommodate personal preferences, less likely to exchange for drugs

Disadvantages: cost, staffing for management, delay to receipt of some items, worth less than cash?

Intermittent schedule/prize system

- Draws from a fishbowl



- Advantages: can be less expensive, can get donated items
- Disadvantages: hard to get donated items, not appropriate from substance abusers in recovery from gambling problems.



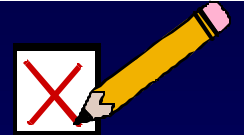
Other reinforcers???????





C.) Special considerations

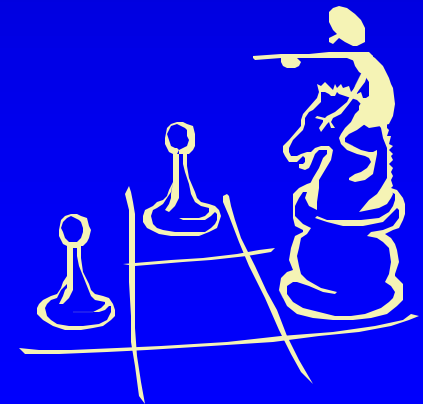
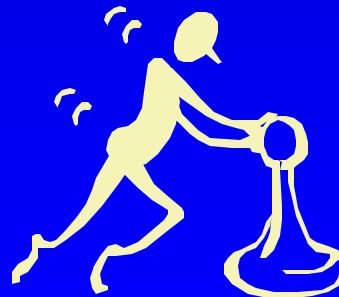
- Objectively quantifiable behaviors
- Consistency
- Frequency of reinforcement
- Immediacy of reinforcement
- Magnitude of reinforcer
- Escalating system with bonuses



Objectively quantifiable behaviors

- Urine or breath samples.
- Activity completion (receipts, business cards with contact person's name and phone).

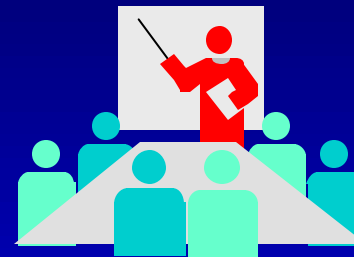
- Expect and plan for exceptions!



Consistency



Train your staff!



- Have a procedure in place to monitor staff compliance with behavioral contracts.
- Reinforce staff compliance.



- Don't let contingencies or monitoring fade over time.



Frequency



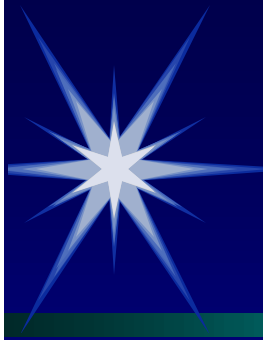
Frequent monitoring
(daily or several times each week)



Frequent reinforcement
(FR1 to establish behavior pattern)



Can reduce over time.



Immediacy

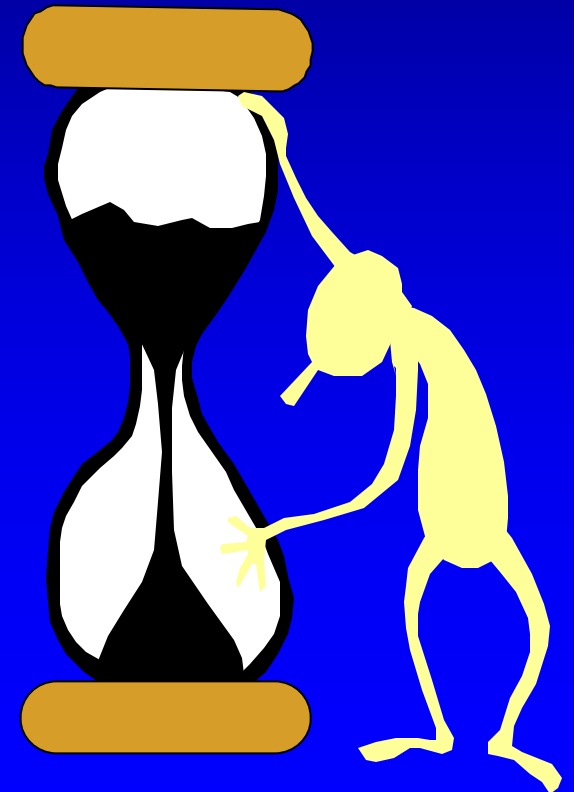


Learning occurs best when time between stimulus and response is short.

Use onsite urine testing systems.

Provide consequences immediately.

Can reduce once pattern is established.



Magnitude of reinforcer



Higher magnitude reinforcers engender greater abstinence
(Silverman et al, 1999; Stitzer et al., 1984).



Arrange your reinforcer to be large enough to compete
with reinforcement derived from target behavior.

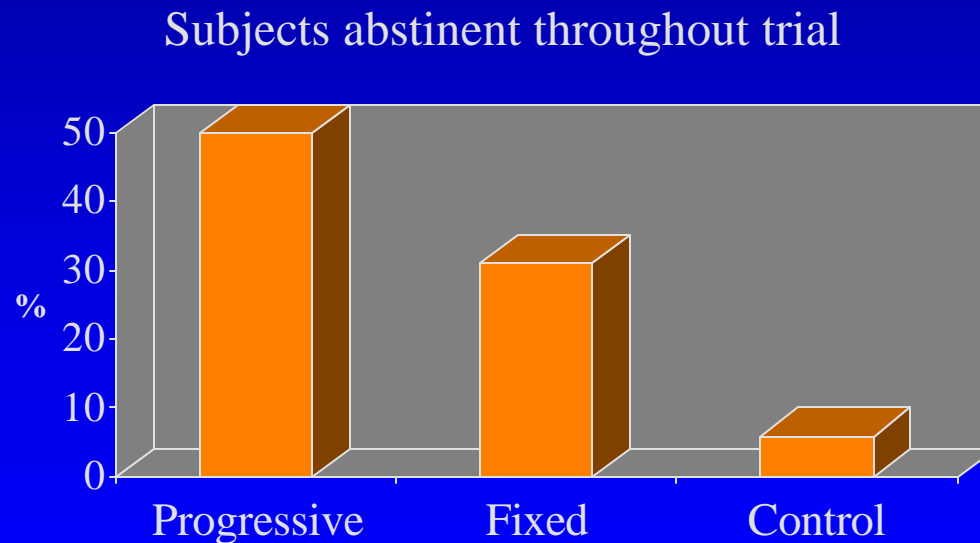
Look for reinforcers of “high magnitude”
but not high cost.



Escalating system and bonuses



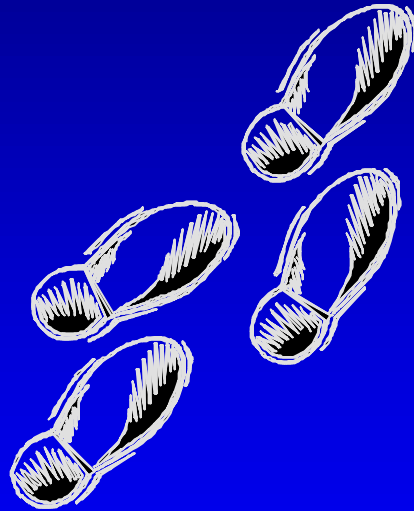
The escalating and bonus system engenders continuous abstinence (Roll, Higgins, & Badger, 1996).



So, one week, one month abstinence \Rightarrow extra drawings,
3 day take-home, special privilege.

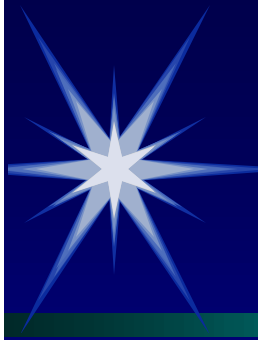


Steps to designing a contingency management intervention

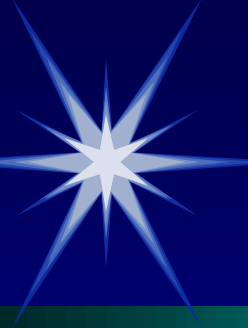




1. Pick a behavior you want to change.

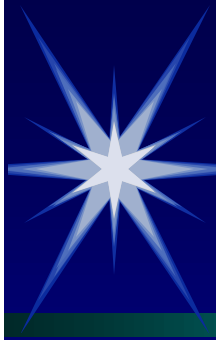


2. Pick a reinforcer.



3. Design a monitoring and reinforcing schedule.

Decide upon a time frame for re-assessment.



4. Include escalating reinforcers, bonuses, immediacy, etc.



5. Ensure consistent application of procedure.



Sample case

Imagine you are working in an outpatient treatment program for substance abusers. You notice that client attendance at group is low every Monday morning.

Design a contingency management intervention to improve attendance at Monday morning groups.